About the Whole Earth Learning Disk

The Whole Earth Learning Disc Project
Published by the Point Foundation

The Whole Earth Learning Disc Project is one stage of the way toward an interactive version of the Whole Earth Catalog on compact disc. It runs on Hypercard (on the Macintosh). At present, it holds about 7,000 cards. Each card pops up with a short review, or a caption for its many illustrations and photographs, or a connection to music and sound. The Learning Disc is linked to encourage browsing and to streamline searches. Self-education, arrived at by rewarding exploration, is the operating philosophy. "Access" information (Where can you get this?) can be summoned at any time. The Whole Earth Learning Disc's non-linear structure

(more)

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dismantles artificial boundaries between subjects, between styles of thinking, and between learning and playing.

POINT is a non profit educational foundation. All contributions are tax deductible. Whole Earth does not sell anything, nor does it accept payment for including an item. We are strictly an independent evaluator. We only recommend stuff we think is great.

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FUNCTION

The Whole Earth Learning Disc is an evaluation and access device. It can help a user discover what is worth getting and how to get it. We're here to point, not to sell. We have no financial obligation or connection to any of the suppliers listed. We only review stuff we think is great. Why waste your time with anything else?

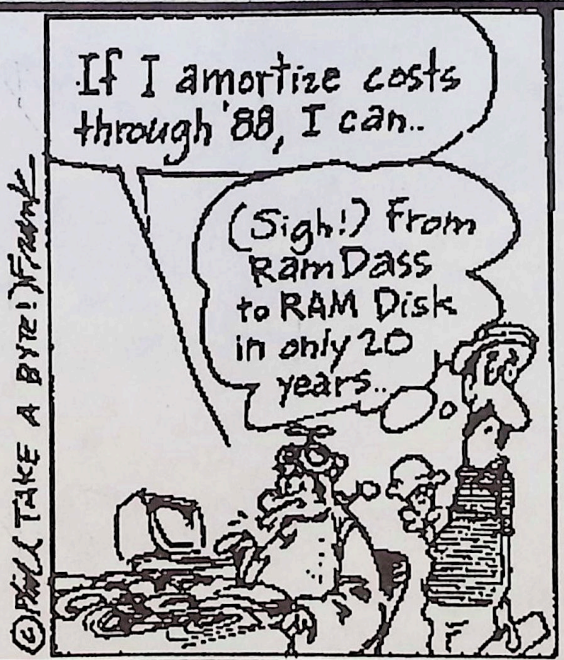
An item is listed in this Catalog if it is deemed:

1. Useful as a tool,
2. Relevant to independent education,
3. High quality or low cost,
4. Easily available by mail.

The listings are continually revised and updated according to the experience and suggestions of Catalog users and staff. Latest news can be found in our magazine, the Whole Earth Review.

20 Years Later...

the dream lives on...



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(Thank you!)

WHOLE EARTH HYPERLOG:
BEGINNING A COMMUNICATION MEDIUM CALLED STACKWARE

ONE AFTERNOON IN EARLY WINTER, 1986, we got a phone call from a project evangelist at Apple Computer, Inc. Seems they had an exciting new technology nearly perfected, and would we like to join them in trying it out on the *Whole Earth Catalog?* We arranged a meeting, saw what they had, and decided it matched something we had wanted to do for a while. We set up a large design meeting a few weeks later.

Present at the brainstorming were Stewart Brand, Kathleen O'Neill (our graphic designer), Fabrice Florin (video artist who filmed "Hackers"), Alan Kay (Apple Fellow and computer visionary), Bill Atkinson (inventor of MacPaint, the granddaddy of personal computer graphics programs), the enthusiastic Apple "Multimedia And Beyond" research gang (Mike Leibhold, Tim Oren, Ted and Carol Kahler, Steve Wyre and Andy Poggio), and myself. The goal of the project was modest: to advance 500 years of book evolution, and improve 19 years of *Whole Earth Catalog* fine tuning, by using a new kind of software masterminded by Bill Atkinson, called

Bill Atkinson, HyperCard Bowlmaster, at product's roll-out.

HyperCard (it was actually named WildCard at that time).

The basic card.

The model for HyperCard is the 3-by-5 card. A card is represented by a Macintosh screen. As you flip through screens (cards), you read them one after another, as if they were in a stack. Cards can hold any kind of information you want, in any format you want, including pictures. Rather than rest inertly, as on a Rolodex, information on a HyperCard can be actively linked to any other point on any other card. Those linking spots can be a word, a bunch of words, or a picture. When your cursor touches that spot, it brings forth the card (screen) that it is linked to. The links form a thread through a "stack" of cards. You weave through a stack, jumping from card to card, idea to idea, choosing your own path by touching on the items you are interested in, endlessly discovering new levels, or deliberately aiming toward a desired card.

Your HyperCard Rolodex, for instance, might have one card for every individual. You could link their telephone number so that it dials the number. You could link their address to a small map on another card to show how to get to their house. And the map of that town might be linked to several other names as well. You would then have an interactive Rolodex giving you as much information as you wanted each time.

Another way to imagine it would be to think of a book that had footnotes that appear only when you clicked (touched the cursor) on a passage you wanted to know more about. It would carry you to interesting details, which might themselves have footnotes which are footnoted, and so on. Any date might bring you to a fuller account of what else was happening then by clicking on it, or a name might summon a biography. Commentaries, references, citations could all be connected to appear when needed. This vision is called hypermedia.

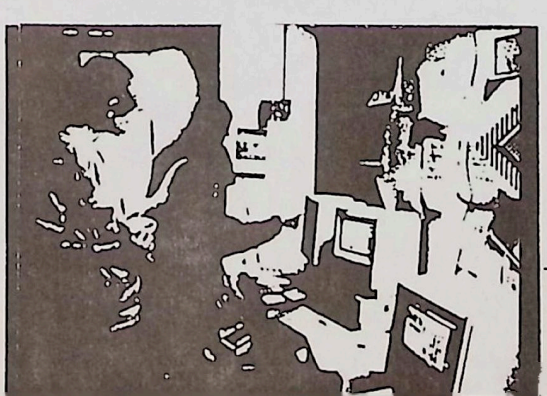
Hypermedia as theory is not very new, and even as fact has several antecedents including a legendary working version known as Xanadu, hatched by maverick Ted Nelson (author of *Computer Lib/Literary Machines*, an underground computer classic in 1974, about to be reprinted by Microsoft Press). Atkinson's HyperCard genius is its card metaphor and its compression into the visual environment of Everyman's Macintosh. Like the Swiss Army knife, it's a tool with low threshold, high ceiling — easy to learn, hard to outgrow — a new instrument that will muster new applications.

The obvious application to all of us was to try a new kind of book, and a better kind of catalog, that would reward both browsing and searching, thus reinforcing the kind of serendipitous learning the *Whole Earth Catalogs* promoted. HyperCard was the first computer utility that looked like it could handle that.

Softwarewise, HyperCard has two faces. On one side, it is a versatile method to construct a database that you can navigate through visually. That makes it reasonable to construct large encyclopedias of wildly various information, like an electronic *Whole Earth Catalog*. On the other side, HyperCard holds a subset wonder called HyperTalk. Co-written by Dan Winkler, HyperTalk is a brilliant, almost conversational programming language that makes creating Macintosh programs possible for ordinary mortals. HyperCard, then, provides amateurs the tools to fiddle under the hood of the elegant Macintosh interface.

Even so, the brief time we had to grow the *Catalog* on hypermedia demanded professional expertise. There was no one expert on HyperCard; we were the guinea pigs. Half of the project's goal was to measure how well HyperCard did on a really large scale. The scope of the *Catalog*, and its natural card-size chunkiness, made it the ideal trial from Apple's viewpoint. So Apple funded us to tell them what we could learn putting the *Whole Earth Catalog* into HyperCard. We had one month. We were to demo it at HyperCard's premier in Boston, at the huge MacWorld Expo.

Our Compugraphic typesetting files were translated into Macintosh text by a local typesetting outfit. The text of two thousand items in the *Essential Whole Earth Catalog* was reduced to a fistful of 3½" disks. Tim Oren, a crack-



Computer nerds get art lessons from K. O'Neill, art director of the Learning Disc.

erjack programmer from Apple, devised a HyperTalk script to cruise along the text file in the manner of RNA and clip off each item as an individual unit, while removing the old typesetting codes. Using two other jigs he dubbed "Scaffolding" and "The Dismantler" he automated much of the process of dishing out the *Catalog* text into cards.

We used a Sony Pro 8 8mm camcorder (p. 122) connected to a MacVision box to digitize illustrations from the items in the *Catalog*. MacVision (Koala Technologies, 269 Mount Herman Rd., Scotts Valley, CA 95066; 408/438-0946) converts a video scarf into MacPaint files. Once in MacPaint format, they were pasted into "cards" by a small team of rapidly experienced cardpasters.

Music and sounds are one way the Whole Earth hyperlog is better than the paper *Catalog*. In our reviews of music-by-mail catalogs we include pictures of albums they carry. Click on the cover and a ten-second sample of music erupts out of the Macintosh. (The built-in Mac speaker is so-so, but if you plug a larger external speaker in the back, you'll get fair sound.) In the field guide reviews we excerpt samples from Peterson's guide to birds and bird songs. Click on Peterson's drawing of a Mountain Chickadee and you'll hear its call. Compare that to the similar-sounding and -looking Black-Capped Chickadee? Okay, do it again.

Bird songs, music, and book readings were recorded on tape cassettes. A software/hardware duet called Soundcap (software) and MacNifty (hardware) captured the playback from a tape deck and deposited the sound into a HyperCard stack. (Sound eats up bytes. You can only fit about one minute's worth of sound onto a Macintosh 3½" floppy.) The music and Kathleen O'Neill's soft art design sense provide a richness to its operation that makes it almost feel like it's NOT on a computer.

It was a hit at the MacWorld show, eliciting brief but prominent mentions in the major papers and trade journals (*Wall Street Journal*, *L.A. Times*, *MacWorld*, *Infoworld*). Much credit goes to others I haven't mentioned yet. Keith Jordan, Whole Earth's circulation director, was exactly the organized personality we needed to keep all the linked parts from becoming a mess of spaghetti. Chief Stackmaster Hank Roberts (usually proofreader on the magazine) made a religion of backing up everything twice, always to our benefit. David Burnor, Elaine Richards, Robin Ramsey, and Pat Oren became the world's first cardpasters. Other staff pitched in on the laborious process of digitizing photos: Don Ryan, Dick Fugett, James Donnelly. By the day of the demo we had re-created about one-fifth of the old *Catalog*, some several thousand completed cards.

Assembly (on-)line: Hank Roberts, Pat Oren, Tim Oren, computing.

The conclusion will be a massive databank that will fit onto a plastic CD-ROM — a compact disk that will commune with your Macintosh. It'll be released when there is hardware to run it (there's none yet). At this point we're calling it the Whole Earth Learning Disc. It will be a periodical of sorts, thriving on a circuit of feedback and suggestions from users. I imagine that some of this traffic will come via The WELL's teleconferencing system (415/332-4335 for info).

HyperCard will be a medium of communication. Within a week after it was introduced, The WELL had a raging conference on the topic. A prime function there is the Stackware Exchange, where user-written stacks of cards are swapped, showcased, and improved upon. Early stackware will have some of the untamed innovation that early BASIC computer programs had. The WELL confronts the possibilities with a topic called "What can you do with Hypercard?"

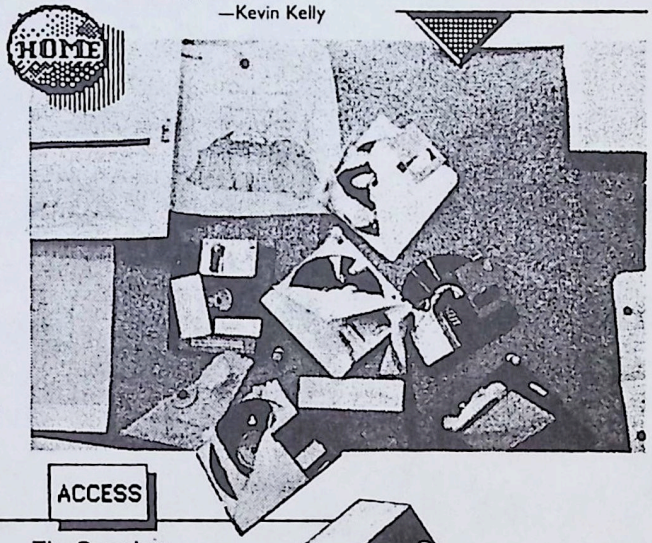
Some of the things I imagine are: incredibly complex adventure games, self-directed classroom courseware, interactive shopping catalogs, pictorial spreadsheets, and ultimate clip-art files. Enough, anyway, to get going. ■

HYPERCARD

Skinny Macs, even Fat Macs, won't quite do for this musclebound program. You'll need a Hunk Mac (a Plus or better) with at least 1 meg RAM to run things smoothly. Very best is a setup with a hard disc. There are two official sources for HyperCard. It's bundled free with all new Macintoshes, or it can be bought for $49 from a local Apple dealer.

—Kevin Kelly

With no margin for error, any flaky floppy disks were pinned to the Floppy Graveyard.



THE COMPLETE HYPERCARD HANDBOOK

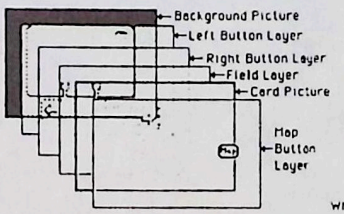
Some software programs have all the luck. On the day HyperCard was released, an equally groundbreaking guidebook to it was published in tandem. Like HyperCard itself, it is thorough and deep. It's a massive, hefty tome of 700 pages, completely fluff-free.

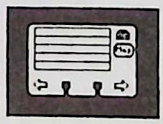
It exhaustively treats the mechanics of making cards; assembling them into "stackware;" creating links; and writing instructions in HyperTalk. Even if you don't usually use paint programs, you'll find yourself creating graphics in HyperCard regularly. The paint options are therefore covered in depth. As we worked on the Whole Earth Learning Disc we picked up a number of tips from the *Handbook* we hadn't known about. Not a reference book per se, the *Handbook* does its best job illustrating the conceptual innovations introduced by HyperCard. Notions like "stackware" (stacks of cards that are exchanged), "buttons" (linking hot spots), and "backgrounds" (the layers of information on a card) are all illuminated into clarity.

I primarily use those Macintosh programs which stick with me if I don't ever open the manual. But HyperCard, with its tools-for-making-tools structure, is simply one Macintosh program that you won't be able to unfold fully without a supplemental help book. For the immediate future, this is the book to get. —KK

The Complete HyperCard Handbook
Danny Goodman
1987; 695 pp.
$29.95
($31.45 postpaid) from:
Bantam Books
414 E. Golf Road
Des Plaines, IL 60016

What the Author Sees





What the Browser Sees